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(54) Titre : CONVERTISSEUR CATALYTIQUE DE TURBOREACTEUR

(54) Title: JET ENGINE CATALYTIC CONVERTER

(57) Abrégé/Abstract:

The JET ENGINE CATALYTIC CONVERTER is a catalytic converter built into the engine. This invention uses platinum(Pt), the primary catalyst used in automobile catalytic converters. Pt is anodized onto all the metal parts of the combustion chamber and in the turbine, except for any bearings that may be used in these stages. This catalyzes some of the air/fuel mixture in the engine where it can do useful work to propel the aircraft. It only needs to use Pt. However if other more economical catalysts are available, they could also be used provided they are effective.

## Abstract

The JET ENGINE CATALYTIC CONVERTER is a catalytic converter built into the engine. This invention uses platinum(Pt), the primary catalyst used in automobile catalytic converters. Pt is anodized onto all the metal parts of the combustion chamber and in the turbine, except for any bearings that may be used in these stages. This catalyzes some of the air/fuel mixture in the engine where it can do useful work to propel the aircraft. It only needs to use Pt. However if other more economical catalysts are available, they could also be used provided they are effective.

## Specifications

The INTERNAL COMBUSTION ENGINE is a transducer that converts thermal energy into mechanical energy. In an internal combustion engine, the NET EFFICIENCY of the engine is determined by the THERMAL EFFICIENCY, and the MECHANICAL EFFICIENCY. NET EFFICIENCY is determined by how much fuel is needed to produce 1hp. THERMAL EFFICIENCY is determined by how much of the fuels' chemical potential energy is converted into heat. MECHANICAL EFFICIENCY is determined by how much of the heat used by the engine is converted into mechanical energy after friction losses.

$$\text{Heat in} = (\text{mass in grams} \times \text{potential energy/g}) \times (\text{percentage of fuel burned}/100)$$

$$\text{Power out} = \text{heat in} \times \text{efficiency} = \text{heat in}$$

This invention makes use of unused energy that normally would be wasted. This device causes the engine to burn a higher percentage of the air/fuel charge in the engine. As this patent is not for any specific engine but jet engines in general, the thickness of plating will depend much on the engine in question. The plating needs to be as thin as possible. This is so it will not only get hot as fast as possible. This will also improve durability as it will be less susceptible to expansion damage.

Notes:

This invention is intended to be as transparent as possible. There should be no need to alter the shape of any parts in the engine. The standard air/fuel mixture can be used.

## Claims

1. The engine will be more responsive.
2. The engine will be smoother.
3. The engine will gain more thrust across the power band.
4. The engine will last longer because there will be fewer by products such as carbon and unburned fuel to contaminate the engine.
5. There will be about an increase in fuel economy depending on the engine and increased range.